



SUSTAINABLE COTTON PROJECT







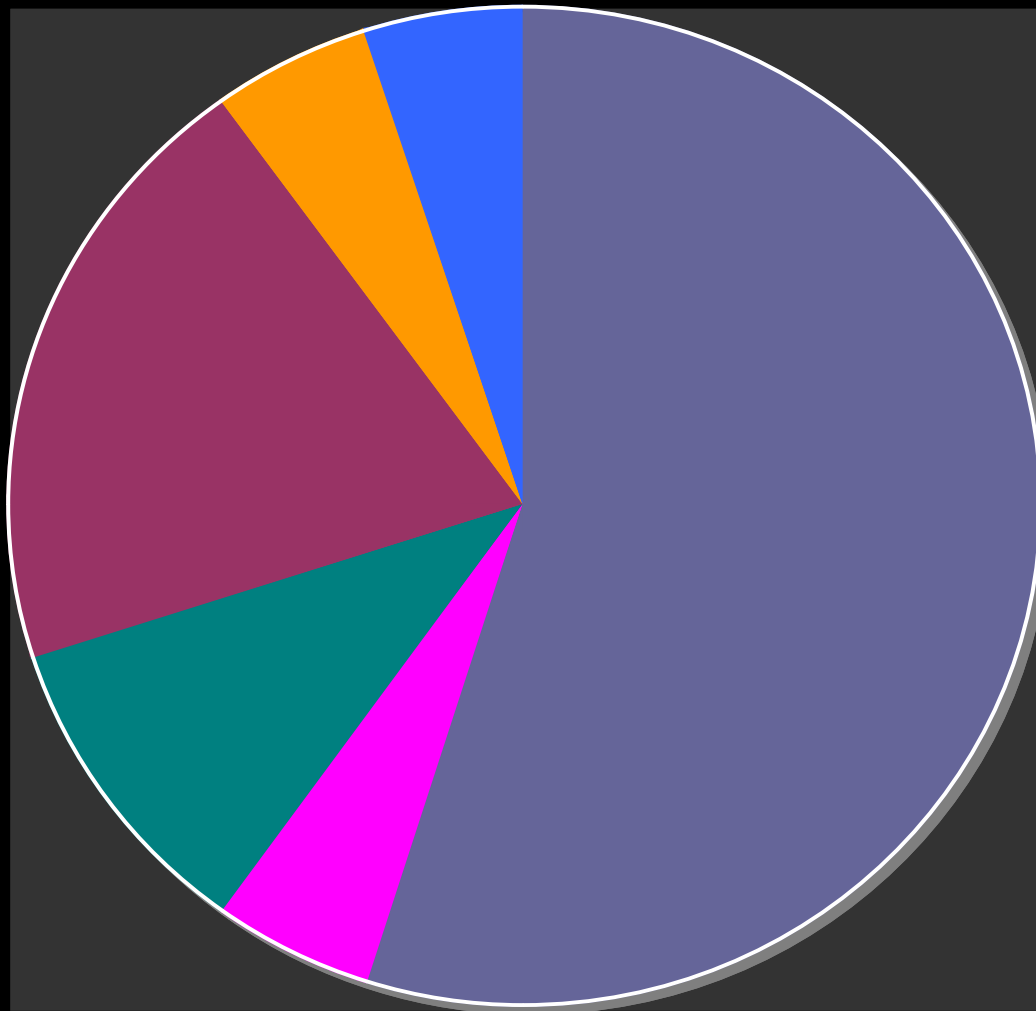
San Joaquin River near Firebaugh California

Bridging between knowledge and action
Community driven change
BASIC





WORLD'S TEXTILE USE



- cotton
- animal fibers
- linen jute hemp
- polyester
- nylon
- acrylic

Cotton comprises almost 60% of world textile needs



**6,946,000
pounds
chemicals
used on
California
cotton.**

Cotton is one of the top ten crops in California using
the greatest volume of pesticides

For 2002, latest year data
available. Pesticide Action

BASIC SEEKS TO REDUCE THE HIGH RISK CHEMICALS USED ON COTTON

Profenofos

Naled

Dicofol

Aldicarb

Chloropyrifos

Trifluralin

Prometry

Diuron

Avermectin

Carbofuran

Diazinon

Propargite

Cotton chemicals targeted by BASIC are based on:

- ✓ Toxicity
- ✓ Pesticide Action Network 'Bad Actor' category
- ✓ Actual/Potential groundwater contaminant
- ✓ Volume of use
- ✓ Available alternatives

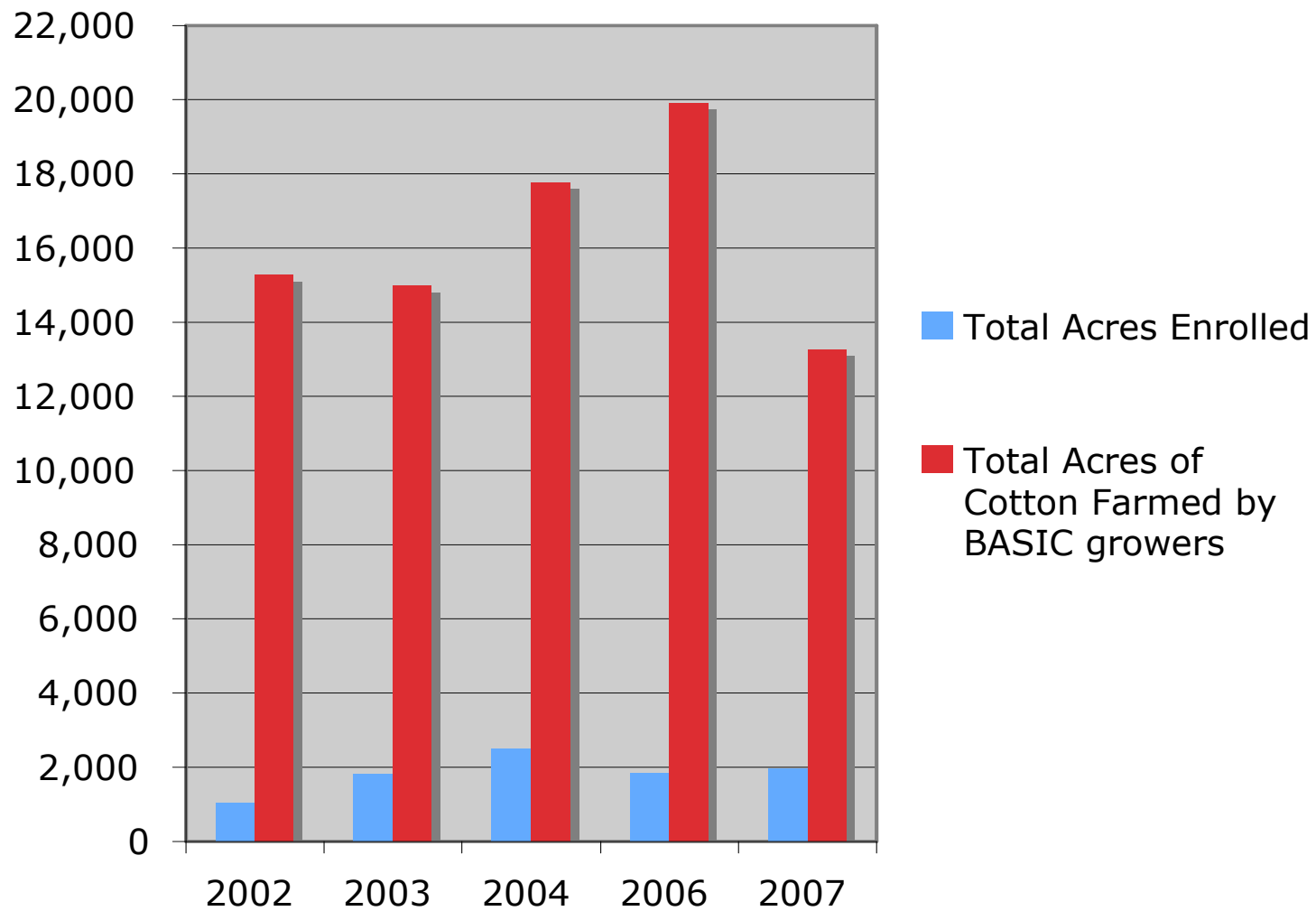
BASIC IS NON GM COTTON



BASIC Components

- ✓ An April planting date and use of University of California Plant Degree Forecasts*
- ✓ Cotton fields located near alfalfa or planting beneficial habitat along field margins
- ✓ Intensive scouting to monitor pests and beneficial insects
- ✓ Early releases of natural enemies within cotton fields
- ✓ Limiting or eliminating pesticide applications in the spring, or using softer targeted chemicals
- ✓ Soil fertility and nutrient monitoring
- ✓ Partnering with UC to customize approaches to BASIC fields.

Numbers





BASIC Project News

FIREBAUGH PROJECT UPDATE

2004 is shaping up to be a good cotton year. The crop is ahead of schedule with most growers having planted in late March or early April. BASIC field staff are monitoring 38 cotton fields this season. Of those fields, about 16 of them have planted additional beneficial habitat on field margins. We will be taking photos and keeping track of how the fields look again this year. Those fields with planted habitat are showing greater numbers of ladybugs and other beneficial insects and many more diverse species of insects. Ladybugs are an important aphid predator which makes them welcome in the cotton fields.

The cotton is beginning to flower and the first bolls are now showing. Most plants are in the 12th and 14th node. We have begun the petiole analysis of the fields and will get the results to the growers as soon as possible. This is one of the services offered to the BASIC growers. Petiole analysis helps growers make more accurate fertilization decisions which can impact both costs and yields.

Lygus counts have been lower this year with many growers using effective strip cutting of adjacent alfalfa to help control lygus populations. There is about one month of lygus pressure left in the season, so things are looking good.

There was some mite pressure earlier in the season, but they now seem to be under control with mite numbers at or below threshold levels. With the first signs of aphids noted in the enrolled fields, BASIC staff will be releasing 20,000 lace wing larvae in the fields, at the location where the aphids have been spotted.

Our next field day will be in July, watch for the flyer. We hope you will join us.

BAKERSFIELD PROJECT UPDATE

This seems to be a great year for cotton. All the growers were able to plant their fields by the end of March. Although the end of May and June have been cool, the cotton is rapidly growing after its 2nd irrigation. The cotton is beginning to flower and set squares. Insect pressures have been light. Although most farmers have not planted habitat due to the lack and expense of water, they are manipulating the alfalfa fields that they have control over around their cotton. Other cultural strategies such as dust control, weed control and ant control will be important to keep pests like two-spotted spider mites and whiteflies under biological control. If growers can use these cultural strategies, Lygus, whitefly and spider mites can be controlled biologically without any (increasingly expensive) insecticidal applications.

So far this season, none of the above have reached pest status. Two-spotted spider mites outbreaks in two of the fields have been controlled by releasing *Galendromus occidentalis*, a predatory mite. It is important to keep the fields clear of annual morning glory as it is a good host for two-spotted spider mites early in the season and a good whitefly/aphid host later in the season. Small amounts of silverleaf whitefly have already been found in Bakersfield at 2 sites. This is the earliest I have ever detected whitefly. I spoke with Dr. David Byrne at the University of Arizona and he has seen early whitefly this year in Arizona as well. This is not necessarily bad news though because we have an extra month to establish biological controls (*Delphastus pusillus*, a predatory beetle and *Eretmocerus californicus*, a silverleaf whitefly parasite). Due to the early appearance of whitefly though, it is especially important to destroy ant nests in and around the field as the ants will 'farm' the whiteflies and aphids. More importantly they will undermine the other biological control agents in the field. So far Lygus numbers remain low (1-2 counts) with high numbers of big-eyed bugs adults and nymphs (5-15/50 sweep sample). Remember the presence of nymphs is an indication of a growing population, hence the big-eyed bugs are reproducing at the expense of the immature Lygus.

Volume 10, Issue 10
Summer 2004



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Featured Website

For great insect identification photos visit the Insect Gallery at <http://www.surecrop.com/insects/beneficial.htm>



BASIC Cotton Manual

Practical Lessons Learned from the Sustainable Cotton Project's
Biological Agriculture Systems in Cotton (BASIC) Program

Marcia Gibbs

Sustainable Cotton Project

Rex Dufour and Martin Guerena

National Center for Appropriate Technology

With Funding from the California State Water Resources Control Board

Sustainable Cotton Project

© January 2005

Outcomes

The Sustainable Cotton Project's BASIC program (Biological Agricultural Systems in Cotton) has been active in California's Central Valley for 7 years.

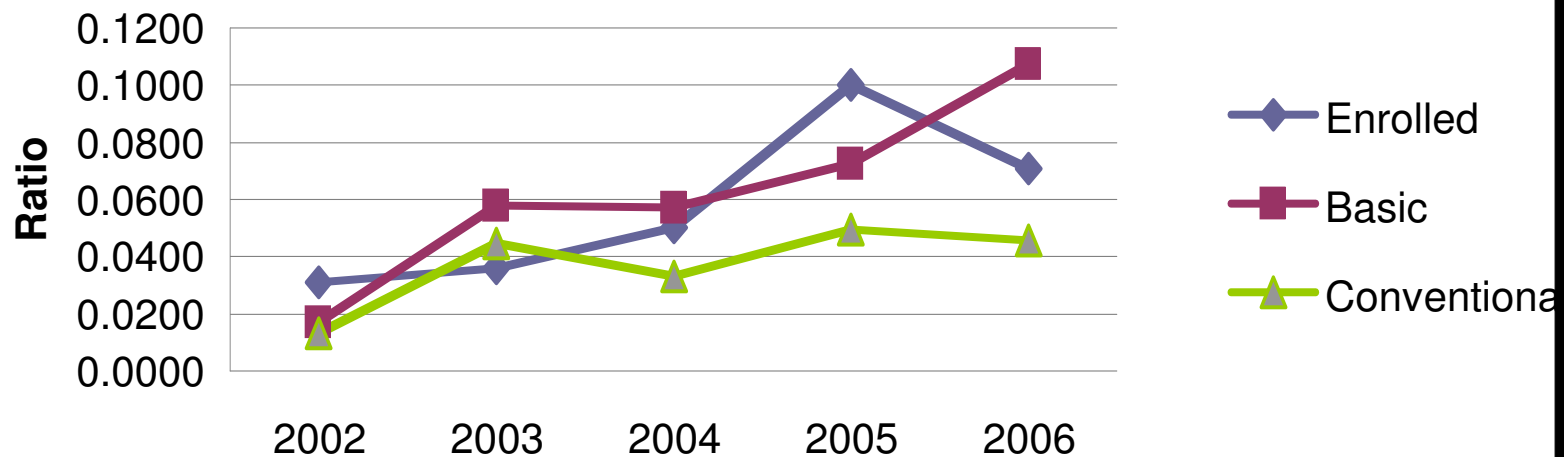
BASIC is a proven program that enables conventional farmers to adopt organic and bio-intensive integrated pest management farming techniques.

BASIC farmers reduce insecticides and miticides by an average of 73%.

Basic is non-GM

When Basic Growers turn to pesticides,
they are more likely than their neighbors
to choose reduced risk materials

Ratio (Reduced Risk/High Risk Chemicals)





Bridging between action and motivation
Adding Value to Farmers' Crop
Sustainable Cotton Project

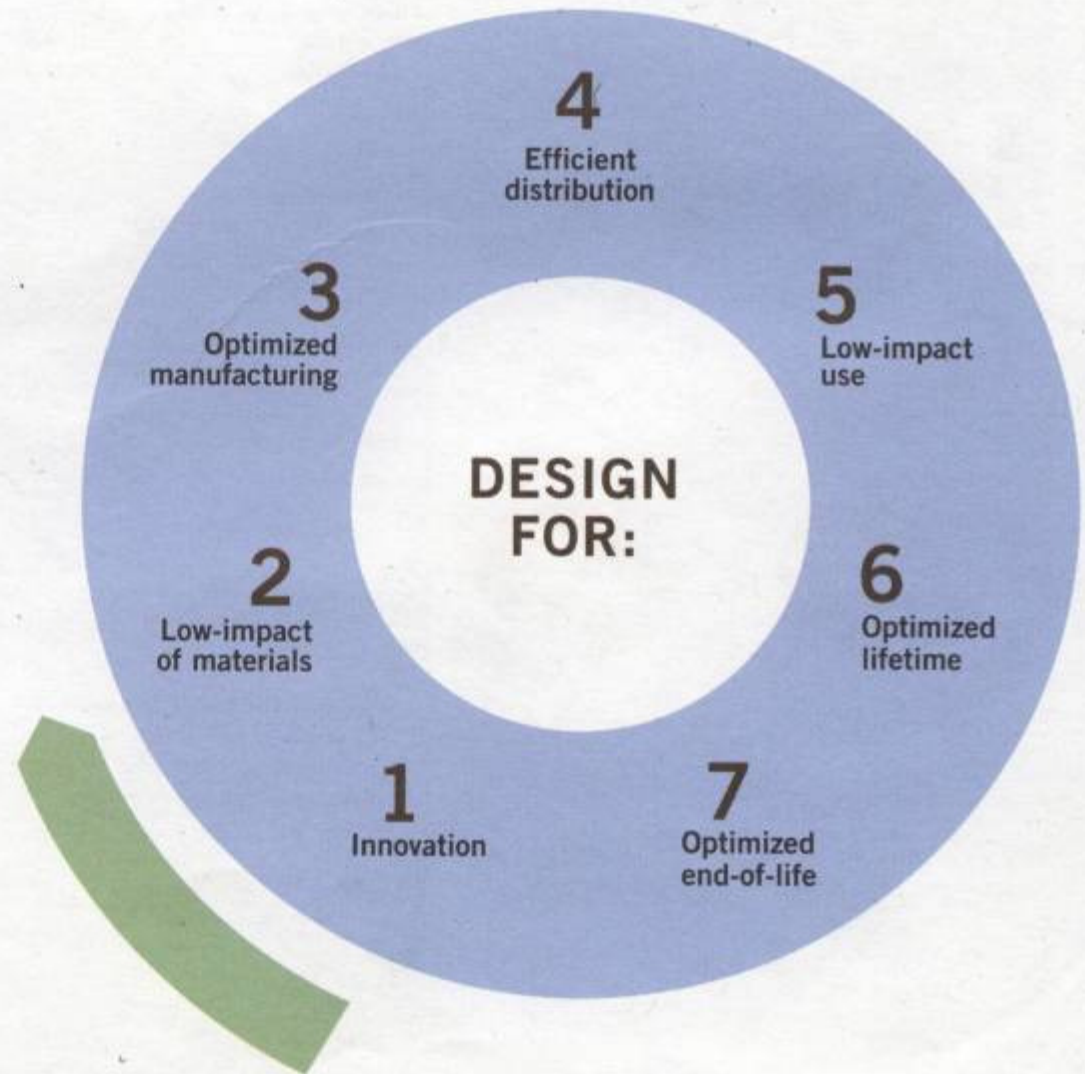




This could be Cleaner Cotton TM



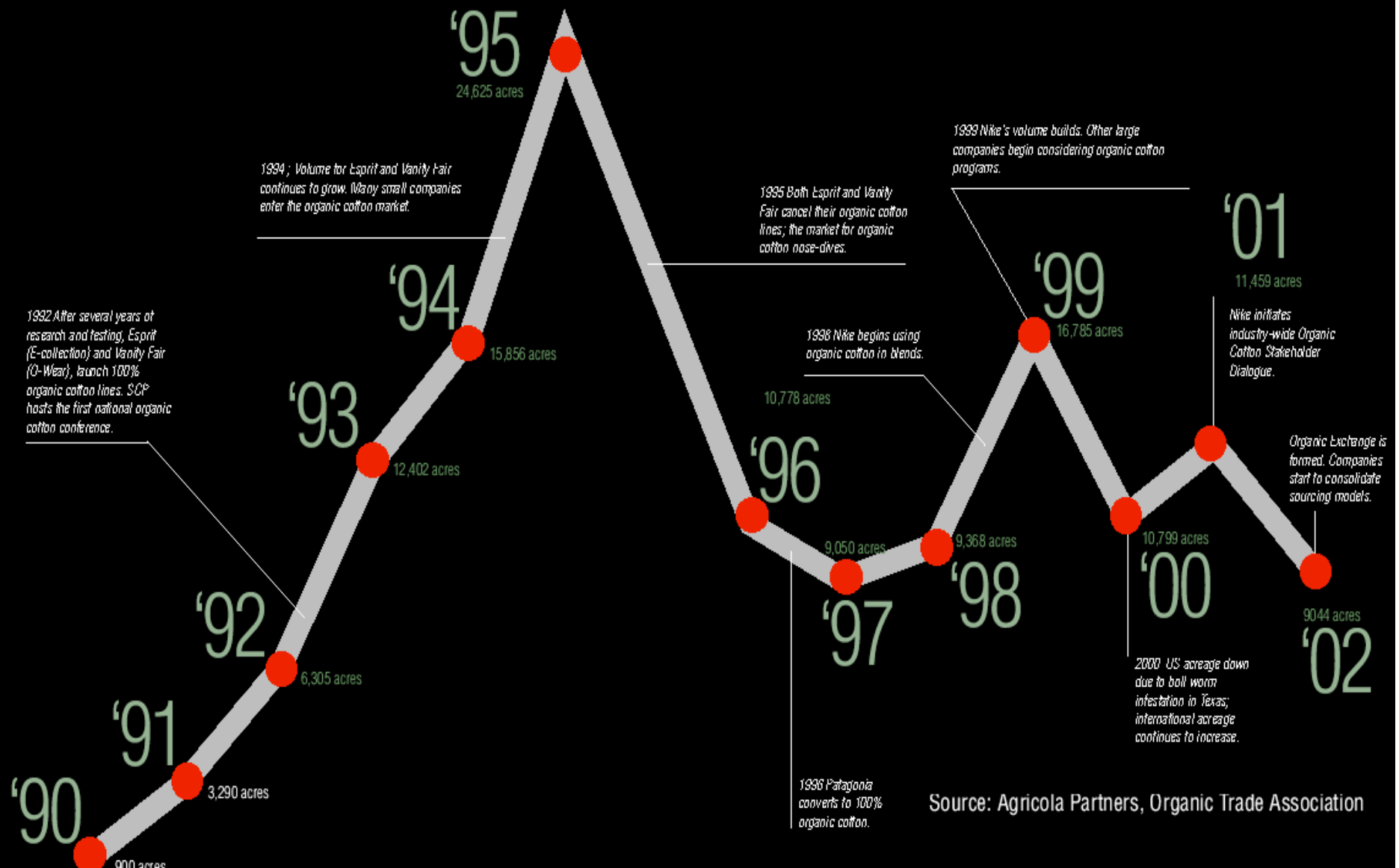
Eco Design Strategy Wheel





U.S. Organic Cotton Acreage

Many companies are sourcing organic cotton offshore where costs for labor are cheaper



Source: Agricola Partners, Organic Trade Association

We're local. Come visit.

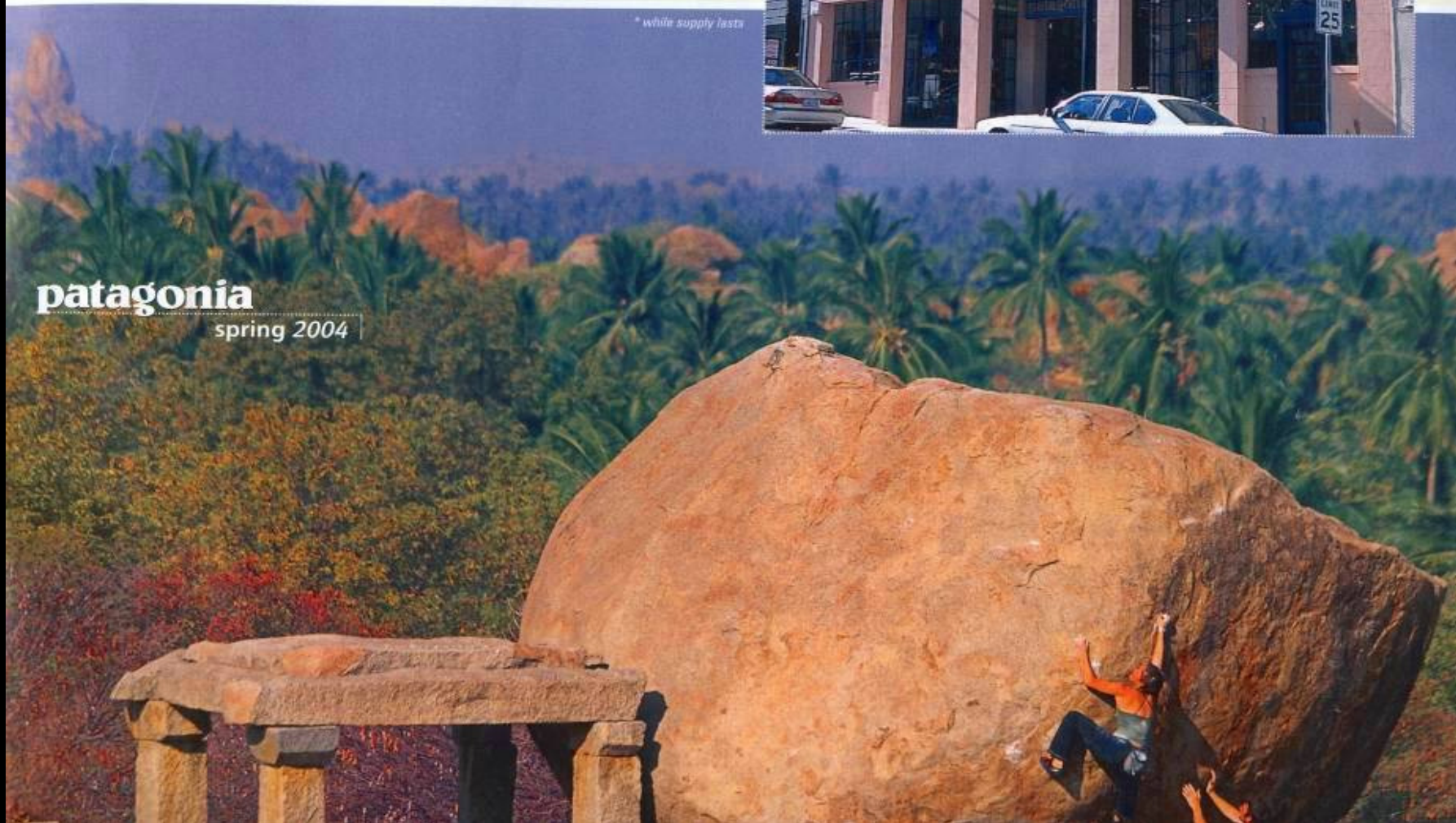
Patagonia is rooted in a long line of folks that love silent and graceful sports pursued in the wild. Come meet the latest generation in our **SAN FRANCISCO STORE**, and get tips on the sports they love and where to pursue them – in the Bay Area and throughout Northern California.

*Stop in for a free Lonely Planet USA guidebook.**

* while supply lasts



patagonia
spring 2004







CLEANER COTTON™



 **Herman Miller**

For its 50th anniversary,
the beauty of santos palisander ▶

LEED

**EILEEN
FISHER**

alive in the world



del forte
DENIM





This could be Cleaner Cotton™

MARKETABLE BENEFITS OF CLEANER COTTON

- ✓ **Quantified chemical reductions**
- ✓ **Supports company environmental goals**
- ✓ **Mitigates potential of negative PR from GM cotton**
- ✓ **Builds emotional value of the brand**

PLEASE
DO NOT
SPRAY

Watch Wind Speed
and Direction

BASIC
cotton



SOCIAL BENEFITS OF USING CLEANER COTTON

- ✓ **Supports American family farmers**
- ✓ **Reduces farm worker exposure to chemicals**
- ✓ **US grown, supports rural US economy**

ENVIRONMENTAL BENEFITS OF USING CLEANER COTTON

- ✓ **Cleaner soil, air and water**
- ✓ **Converts conventional acres more quickly**
- ✓ **Provides a market for transitional acres of cotton**

Emerging cotton categories and markets

Conventional
Cotton

GM
Cotton

BASIC
Cotton

Organic
Cotton

Fair Trade
Cotton

“The brands in our group are constantly looking at newness to keep one step ahead of the High St..... SCP and BASIC... cotton are very much of interest to certain brands within our group”.

Senior Fabric Technologist, UK Apparel Group

Acknowledgements

- ✓ Appreciation to SWRCB for funding
- ✓ Special thanks to BASIC growers of Firebaugh and Dos Palos for their commitment, resources, ingenuity and patience
- ✓ Contributions of SCP Field Staff, PCA Luis Gallegos and Joy Paloutzian are acknowledged

